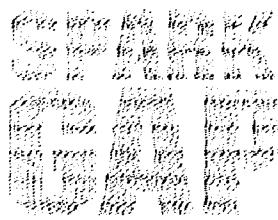


MIDSTATE AMATEUR RADIO CLUB
MARC

Ham Radio News from Johnson County, Indiana

MARCH 1993



President: Bob Cammack N9IMP

Vice Pres: Randy Shake KC9LC

Secretary: Bill Brinkmann KA9ZMU

Treasurer: Mac McCarty NV9K

Repeater: David Julian WB9YIG

Activities Director: Jack Parker NT9J

R.A.C.E.S. Officer: Mike Holland AA9FP



VE TESTING OPPORTUNITIES

Mar 20 Franklin	Mac McCarty NV9K	317-736-6320
Apr 3 Muncie	Peggy Coulter, W9JUJ	317-288-0481
Apr 17 Franklin	Mac McCarty, NV9K	317-736-6320
Apr 21 Indy	Jack Reynolds, AA9BO	317-251-6000

NOVICE CLASS UPDATE

The Novice class has increased to 24 since the first session. Although the second week was snowed-out, we gained some new class members for the 2nd and 3rd weeks. Most seem to be sticking with the code and we hope to test some for Novice in the next few weeks. Present plans are to also offer the Tech test if any are ready. Tom Scott passed his Novice test during the last session.

MORE HAMS TO FLY

STS-55 Space shuttle Columbia, recently welcomed aboard their fifth amateur radio-licensed crew member. Charlie Precourt, Mission specialist, just received call letters KB5YSQ. Originally set for launch February 25th, STS-55 has been delayed for a mid-March launch. Steve Oswald, the space shuttle pilot, also recently passed his amateur radio exam and received the call letters KB5YSR. This makes the second all-ham crew in space flight history. The first occurred with Ken Cameron's STS-37 flight in April 1991. Ken will be commanding the STS-55 when it is launched some time in the near future.

DO YOU HAVE MONEY LEFT?

By the time you read this the ham fest at the State fairgrounds will be past and you will have spent a large part of the money you saved for the event. However if you had some left over you can spend it at the Columbus hamfest on April 3rd. If you need more info you can contact Marion Winterburg WD9HTN at (812) 342-4670.

PACKET ON 6 METERS

The establishment of a new 6 meter packet station in our area is the beginning of a network that may be the gateway to southern Indiana and eastern Kentucky, and eventually to points in Georgia and Florida. Bob WB5VZT and Joe KA9ZPA have constructed a packet station on 6 meters that can be accessed on 2 meters via WB5VZT-3.

Through a joint effort with hams in and around Lawrenceburg, Kentucky a packet gateway to the mid/southern states area has become possible. Arrangements have been made to have a 100 watt digipeater at Seymour, Indiana and a 6 meter node at Lawrenceburg, Kentucky. Hams in Kentucky hope to establish a backbone to Atlanta, Ga on 2 meter nodes.

If these plans work out, the 6 meter PBBS will be the focal point for the mid/southern states area. There will be a 100 watt digi in Greenwood, Indiana. The intent is to have a 100 watt digipeater at Columbus, Indiana and Louisville, Kentucky with access to Lawrenceburg, Kentucky's 6 meter/2 meter Node. This is an ambitious undertaking and we hope the idea becomes a reality.



ON THE DARK SIDE

The following appeared as a packet message on the WW9A BBS recently. Some of you probably know Brad N9INN who originated the packet:

Driving home from dinner tonight, I flipped on the HT just to hear what was on the repeater (the particular repeater was not mentioned.) As it happened, I just caught the tail-end of a transmission from a youngster, perhaps 9 or 10 (I never did find out) who was identifying in a hesitant, broken voice. You could tell it was probably the first, or one of the first, transmissions he had ever made. He was a newly upgraded technician, a KB9 signing with a "temporary KT", and quite nervous.

Well, my friends, it was as if someone had thrown a piece of raw meat to a pool of starving sharks! The "repeater police" sprang into action. A few of the frequency's regulars flashed their badges and demanded to know who this whippersnapper was and who's call was he bootlegging? You could hear the hard drives screaming as the "cops" frantically searched their databases for the true owner of this pilfered call sign! By the time it was determined that this young gentleman (the only GENTLEMAN on the frequency at that time) was indeed licensed as he had identified, the damage had been done. The "cops" had succeeded in running the young man off of the frequency, showing him that the only "good" ham is an "old" ham!

I was truly ashamed for all those involved. And I ask...why? What purpose was served?

ED. NOTE: An increasing number of young men and women are getting interested in amateur radio! Incidents of this type can only damage the future of our hobby!

CALLSIGNS AS OF MARCH 1ST

Extra	Advanced	Tech/General	Novice
AA9GA	KF9NP	N9SMB	KB9ILH

A VISIT FROM FLORIDA

Ron Taylor N9PMG was in Franklin on the 11th after visiting in-laws in northern Ohio. He contacted NV9K to ask if any 220 repeaters were active in this area. It seems that in his area of Florida the 220 radio is more popular than the 2 meter! Since he only brought a 220 with him he could not contact any local club members.

Ron intends to upgrade to general in the near future so he can have contacts from Florida with his local friends on the HF bands. He gives his regards to all the club members and especially to Jack NT9J who was a former Karate partner.

HAM PLEADS GUILTY

Jorge Mestre, NS3K, of Fairfax VA, pled guilty today to knowingly and wilfully communicating a false distress signal, resulting in the U.S. Coast Guard launching a major search and rescue operation on August 7, 1992.

Mestre will surrender his FCC amateur radio license, dispose of his amateur radio equipment within 60 days, and make immediate restitution of 50,000 dollars to the U.S. Coast Guard. Sentencing is set for May 7. Mestre could receive up to six years imprisonment and a fine of up to \$ 250,000 !

The FCC used direction finding data, detailed signal analysis of the transmissions, and other information to identify Mestre's station as the source of the false distress messages.

R.A.C.E.S. INFO FROM AA9FP

Although we don't have a simulation net planned for the state tornado drill on the 25th of March, Dave Crockett has requested that the various races officers connect to the GLNET on packet to get a look at how many counties he can rely on via packet.

Also a CPR class has been scheduled for Saturday, April 3rd at the EOC. It starts at 9 AM and lasts till 5:30. The cost is 10 dollars to cover the price of materials. We still have 3 open slots so anyone interested in taking the class should contact AA9FP at 535-8865.



To: The Bureau of "Waddamagonnadonow?:"

I'm writing in response to your request for additional information for Block Number 3 of the Accident Reporting Form. I put "poor planning" as the cause of my accident. You said in your letter I should explain more fully, and I trust the following details will be sufficient.

I am an amateur radio operator and on the day of the accident I was working alone on the top section of my new 80 foot tower. When I had completed my work, I discovered that I had, over the course of several trips up the tower, brought up about 300 lbs of tools and hardware. Rather than carry the now unneeded tools and material down by hand, I decided to lower the items down in a small barrel by using a pulley, which fortunately was attached to the gin pole at the top of the tower.

Securing the rope at ground level, I went to the top of the tower and loaded the tools and materials into the barrel; I went back to the ground and untied the rope holding it tightly to insure a slow descent of the 300 lbs of tools. You will note in Block Number 11 of the Accident Reporting Form, I weigh only 155 lbs.

Due to my surprise at being jerked off the ground so suddenly, I lost my presence of mind and forgot to let go of the rope. Needless to say, I proceeded at a rather rapid rate of speed up the side of the tower. In the vicinity of the 40 foot level, I met the barrel coming down; this explains my fractured skull and broken collarbone. Slowed only slightly, I continued my rapid ascent, not stopping until the fingers of my right hand were two knuckles deep into the pulley.

Fortunately, by this time, I had regained my presence of mind and was able to hold on to the rope

in spite of the pain. At approximately the same time, however, the barrel of tools hit the ground and the bottom fell out of the barrel. Devoid of the weight of the tools, the barrel weighed approximately 20 lbs. I refer you again to Block Number 11. As you might imagine, I began a rapid descent down the side of the tower. In the vicinity of the 40 foot level, I met the barrel coming up; this accounts for the two fractured ankles and the lacerations on my legs and lower body.

The encounter with the barrel slowed me enough to lessen my injuries when I fell on to the pile of tools, and fortunately only three vertebrae were cracked. I'm sorry to report, however, that as I lay there on the tools, in pain, unable to stand, and watching the barrel 80 feet above me, I again lost my presence of mind and let go of the rope!

Sincerely and shaken, Dunlego Megone

There once was a fellow from Chesser
Whose knowledge grew lesser and lesser
It soon grew so small, He knew nothing at all!
And now he's a college professor!

IT'S GOING TO BE A BAD DAY WHEN:

Your birthday cake collapses from the weight of the candles.....

The bird singing outside your window is a vulture....

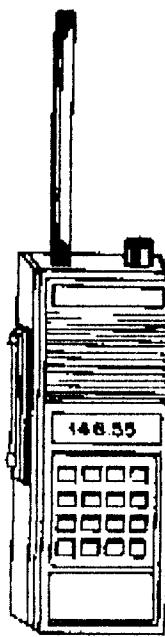
BUMPER STICKER: "I refuse to have a battle of wits with an unarmed person."

CHURCH BULLETIN TYPOS:

"The choir will meet at the Larsen home for fun and sinning."

"There will be a meeting at the south and north ends of the church. Children will be baptized at both ends."

"On Easter Sunday Mrs. Jones will come forward and lay an egg on the altar."



WHAT YOU SHOULD KNOW ABOUT NICAD BATTERY PACKS

CAPACITY: Expressed in terms of ampere hours (AH) or milliampere hours (MHA). This is a measure of the discharge rate needed for the battery to drop one volt per cell within one hour. For example, a fully charged 4 AH battery used with an HT needing 2 AH current will discharge in approximately 2 hours. When a battery pack's capacity drops to 80% of its rated capacity, it should be replaced.

VOLTAGE: When in use, the voltage of the nicad battery pack is about 1.2 volts per cell. This voltage remains until the cell approaches discharge. In normal operation, the voltage should not drop below 1.1 or 1.0 per cell.

NOTE: If the battery pack is used to provide current above the rated value there will be a severe drop in voltage when discharge is approached. This reduces the capacity and can render the battery pack useless!

CYCLES: Used to measure the life of a battery pack, a cycle is a full charge and subsequent discharge. Nicad battery packs should last 1000 or more cycles (two to three years of use, assuming eight hour days, five days a week) under normal conditions.

POLARITY REVERSAL: This occurs when one of the cells reaches zero voltage before the others. Because all cells are connected in series, a reversal in polarity occurs. Although this situation can be reversed, it should be avoided since, if done repeatedly, it will shorten the life of the battery pack.

MEMORY EFFECT: Although more common in the power plate batteries of yesteryear, this can still occur if the proper care isn't given. When a repeated shallow discharge of the same amount occurs more than 200 times, a battery can show a memory effect. This rarely occurs with normal use. Even if it were to occur, the battery will seem to have a reduced capacity of only about 10% which is not noticeable. This means you'll still have access to 90% of its original capacity.

BATTERY CARE

1. Be sure to use the charger that was designed for the type and capacity of the battery pack to be charged. Continuous

overcharging may shorten battery life.

2. Always use a charger that switches to a trickle charge after the battery reaches 60 to 80% of full charge. This avoids battery damage caused by charging a battery at greater than a 10 hour rate for long periods of time.

3. Undercharging a battery causes the most damage! The causes for this are usually either mismanagement or a defective charger.

4. Do not fast charge batteries that have been stored for more than 6 months. Start them off on a slow charge over a 14 to 20 hour period. After the first charge (slow charge) a fast charge can be used for subsequent charges.

5. Never fast charge batteries below 40 deg. F. Chemicals react slower below this temperature. This means a battery pack can't accept a high current. If a high current were used to charge the battery under these conditions, pressure would build up in the cells and there would be a loss of capacity!

6. Check new battery packs as they arrive to be sure the capacity is still at the level needed for your equipment.

7. Check the capacity of nicad battery packs every three months when used every day. Check every six months when used less often. If the battery is less than 80% of its rated capacity, then it is near the end of its life and should be discarded.

8. Avoid deep discharges. If a battery should be discharged below one volt per cell, polarity reversal may occur and the battery would be rendered useless.

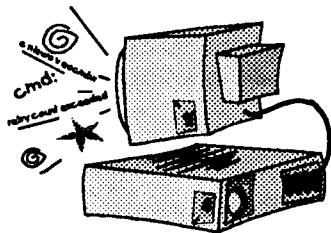
9. Avoid short circuiting the battery pack. This can be done carrying them in your pocket with coins or keys. If a pack short circuits you'll probably burn your fingers or something else according to which pocket it is in!

10. Resist the temptation to buy extra battery packs on sale, then let them sit idle for long periods of time. They could require as many as ten cycles to bring them back to capacity.

11. When storing batteries be sure to store them in a cool place. Storing batteries in high temperatures can cause self-discharging, speeding natural deterioration and capacity reduction.

NEW BATTERY TECHNOLOGY

Motorola has recently introduced the Nickel Metal Hydride battery that offers more power in a smaller package! Some of the advantages are a greater capacity, more operating time between charges, and a more environmental friendly product. Brochures about these batteries will be available for members at the club meeting on March 20th.



THE JOHNSON COUNTY PACKET LETTER

Information for the Beginning Operator

This Month:

- We Introduce Ourselves
- Getting Started on 2 Meters

March 1993
Premier Issue

Welcome

Welcome to the premier issue of the Johnson County Packet Letter. This publication is for you, the packet beginner. Each month you'll find information to help you get started and discover the world of packet radio. This newsletter comes to you from Franklin, IN—the seat of Johnson County. It is distributed with the Midstate Amateur Radio Club's monthly Spark Gap newsletter. While the Packet Letter is copyrighted, you have permission to reproduce it for free distribution, providing it is reproduced in its entirety with the

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We want to hear from you—wherever you are reading this.

You can reach us several ways. First is by packet:

N1EWO@NOARY
.#NOCAL.CA.USA.NA

next is by Internet mail:

jsloman@bix.com

Finally, send paper mail to:

J CPL
Box 636
Franklin, IN 46131

We'd like to hear from you with brilliant suggestions, questions, contributions, and anything else that you might like to pass along. If you are interested in contributing to the Packet Letter, you must send your submission via electronic mail or on IBM-PC compatible floppy disk. We just don't have the time to transcribe paper submissions. Just to make this perfectly clear—we're only talking submissions here, queries, comments and miscellaneous communications are fine via paper mail. Hope to hear

from you. If you get the JCPL any way other than via the Midstate Spark Gap, we'd like to hear how you got it. Well, now that we've got that out of the way, let's get on with the real stuff.

Get on the Air!

This month we'll take a look at just what you need to get a 2 meter packet station on the air. Just what you need to get started can be confusing, but it doesn't have to be.

A packet radio station is 50% radio station. This part should be familiar to you already. There is nothing magical about the radio part of packet radio, just a few simple requirements. First, the newer the radio, the more successful you are likely to be. This is because packet radio depends on a give and take between stations that requires quick transition between transmit and receive.

Newer, solid state transceivers have a sufficiently small "switch-over" time to allow good packet performance. Newer means about five years old or younger. This does not mean that you cannot use an older rig, it's just bet-

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Electronic Submissions may be sent on IBM-PC compatible diskettes to the address above. Comments, suggestions, and miscellany may be sent to the address above, or to:

N1EWO@NOARY.#NOCAL.CA.USA.NA

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3/93

ter to choose a newer rig—if you have a choice.

Can I Use My Handheld?

The quick answer is yes, and no. There is nothing inherently wrong with using a handheld radio on packet, unfortunately it does have a chance of causing trouble though—here's why.

AX.25 is the protocol (set of rules) that amateur packet stations follow. AX.25 uses a technique called CSMA/CD (Carrier Sense Multiple Access / Collision Detection). This sounds complicated, but it is something that every ham is already familiar with. This technique allows more than one station to share a packet frequency (MA—Multiple Access). It works exactly like normal 2 meter repeater operations.

Let's look at a typical repeater QSO. What's the first thing you do—OK, are supposed to do—before keying up on a repeater? Listen, of course. You need to see if anyone is using the repeater before you transmit. This takes care of the first two initials CS—Carrier Sense. You "sense" whether a carrier is on the frequency by listening. This is exactly what a packet station does, and why a handheld might mean trouble in a packet station.

Hidden Transmitter Syndrome

For a packet LAN (Local Area Network) to work correctly, every station on the LAN must be able to hear every other station. Did you get that? We all have to hear each other! Since handheld radios put out a max of about 7W, you can see how they might cause trouble if the LAN covers a large geographical area.

When you can't be heard by everyone else, you're known as a hidden transmitter. Hidden Transmitters are the biggest problem in the packet radio world. But you can do something about it. A good antenna is the first step. If you put up a real antenna—say, a Cushcraft Ringo or a pretty Diamond fiberglass job—up as high as you can, you'll have a good signal, even with low power.

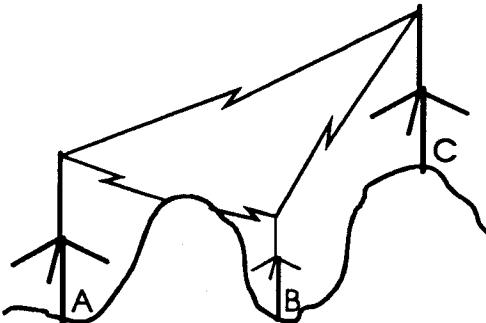


Figure 1: Hidden transmitters cause trouble on the LAN. In this example, the PBBS located at C can hear both stations A and B, though they cannot hear each other. Topography, inadequate antennas, and inadequate power are all potential causes of this problem.

If you can't be heard, and can't hear others, your station won't behave properly. Not only will this mean disconnects and other problems for your station, it will probably affect everyone around you as well. You

need to keep in mind that you are a member of a cooperating community of network nodes—you should behave that way.

The Box of Brains

The TNC (Terminal Node Controller) is the brain of the packet radio system. It interfaces the terminal to the radio. Choosing a TNC can be one of the most confusing things for the beginning packet operator. Before you can choose a TNC, you have to figure out what you want to do with it.

A TNC can be a very simple box that is capable of only packet radio operation. It can also be part of a Multimode Controller. The packet only unit is strictly a TNC. Depending upon the unit you choose, it will do VHF, and possibly HF,

packet. These simple TNC-only units are the least expensive and simplest to operate. You can often find a TNC for a good price from a ham who is upgrading to a multimode unit.

Next Month

We've run out of space in this month's issue so we'll have to finish up this discussion next month. We'll finish this with a discussion of how to choose TNC, and how to get it talking to your computer.



SEVERE WEATHER SPOTTING

With the coming season comes the need for increased awareness of weather spotting procedures. When making reports you should include the following:

WHAT you have seen: wall cloud, tornado, funnel cloud, waterspout, heavy rain, etc. (hail nickel size or larger)

WHERE you saw it: the direction and distance from a known location e.g. 3 miles south of Tampa.

WHEN you saw it: make sure you note the time of your observation.

WHAT it was doing: describe the storm's direction and speed of travel, size and intensity, and destructiveness. Include any amount of uncertainty as needed, i.e. "funnel cloud: no debris visible at the surface but too far away to be certain it is not on the ground."

IDENTIFY yourself and your location.

* *

ESTIMATING HAIL SIZE

Pea size-marble size-penny size-quarter size-golfball size-baseball size.

ESTIMATING WIND SPEEDS

25-31 MPH...Large branches in motion; whistling heard in telephone wires.

32-38 MPH...Whole trees in motion; inconvenience felt walking against wind.

39-54 MPH...Twigs break off trees; wind generally impedes progress.

55-72 MPH...Damage to chimneys and TV antennas; pushes over shallow rooted trees.

73-112 MPH...Peels surface off roofs; windows broken; light trailer houses pushed or overturned; moving automobiles pushed off roads.

113-157 MPH...Roofs torn off houses; weak building and trailer houses destroyed. Large trees snapped and uprooted.

158 MPH and up...Severe damage; cars lifted off ground.

SPOTTER SAFETY RULES

1. Always have a safe place nearby to protect yourself from wind or hail.
2. Cars are safe places in case of lightning, but not in case of tornados or high winds.
3. Moving water is very powerful; It only takes a slight current to push a car off a road.
4. Large hail often falls just in advance of a tornado, especially large tornados.
5. Tornados generally move toward the northeast at 25 to 35 MPH when associated with fronts and squall lines, but can travel at 70 MPH. Go to a substantial building instead of trying to outrun an approaching tornado.
6. The first gust of wind to reach you from a thunderstorm is frequently the strongest.
7. Wall clouds form from the rain-free base often 15 to 20 minutes before a tornado occurs.
8. A rain-free base denotes the storm's updraft area.. a place to watch closely.
9. Overshooting tops are an indicator of a very strong storm!

BE READY !

WHEN BAD WEATHER IS PROBABLE, PLACE YOURSELF ON STAND-BY. IDENTIFY ON THE REPEATER AS "MONITORING" SO THE NET DIRECTOR WILL KNOW YOU ARE AVAILABLE! IF A NET IS CALLED UP INDICATE YOUR CALL, YOUR LOCATION, AND WHETHER YOU ARE, OR CAN BE MOBILE !

Mid-State Reaches Out !

For the first time in the history of the Mid-State ARC an informational booth was set up and manned by club members at the Indy ham fest last sunday. The effort was termed a major success. The booth sported a blue table cloth which held a 13 inch color monitor and VCR plus several large signs advertising the many club activities. The video tape showed all of th club's Field Day exercises throughout the years plus the various tower projects and repeater projects.

A large color photo taken during one field day showing a huge crane with all of the antennas was displayed. An attached sign boasted that "Our club has a 50-ton rotor!"

Several club members worked the booth during the day. They handed out more than a hundred club information flyers which described our many club activities. As a result we signed several new members. Special credit goes to those who manned the booth: Bob Doles WB9AYB, Andy Bowyer N9KZE, Roy Barnes N9PFZ, Joe Vergara KA9ZPA, Larry Harding N9OXM, Charles Sears N9MEW, Bob Cammack N9IMP, and Jack Parker NT9J. Our thanks to the many other club members who stopped by to offer their assistance. My apology if I missed anyone. Our club is only as good as its members and we've got the best! 73. Jack NT9J

MARCH 20TH PROGRAM

This saturday's club program will focus on the up-coming annual Field Day. We'll see video tapes from a couple of the past field day exercises and begin planning for Field Day '93.

**Come to the meeting
this saturday and
meet old friends!**

Reminder: VE Testing at 9:30

